



ESA Phi-Week 2018

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14 November 2018

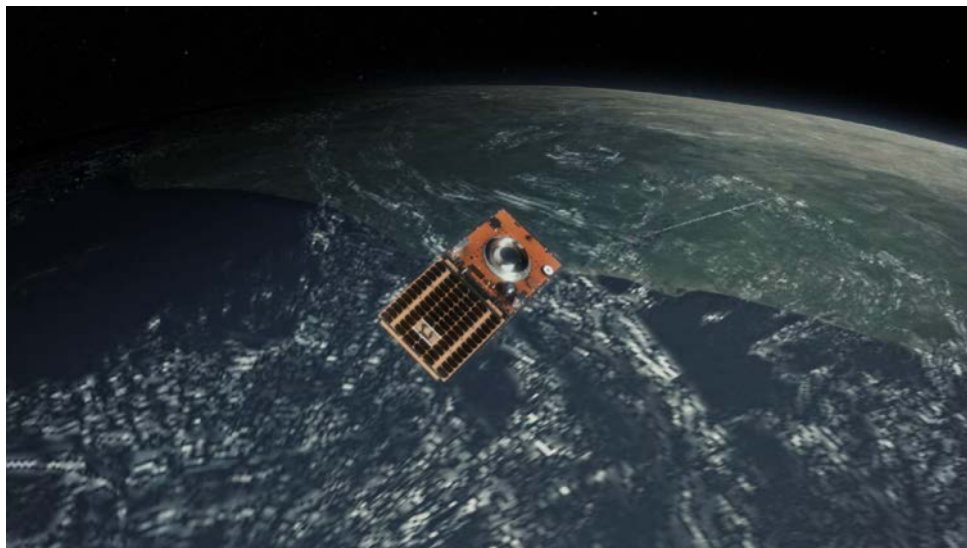


THE EARTH-I CONSTELLATION



Earth-i is launching a constellation of small satellites based on an SSTL platform:

- 1 meter native resolution images
- 1 meter native resolution video (up to 50 fps)
- Re-sample / super-resolution to approx. 60cm



THE EARTH-I CONSTELLATION



First batch of 5 satellites scheduled to launch in 2020

Future batches will launch at timely intervals.

Batches to operate in different orbital planes offering different acquisition times

Imaging & video opportunities throughout the day and night



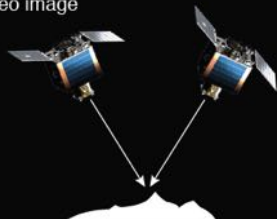
THE EARTH-I CONSTELLATION



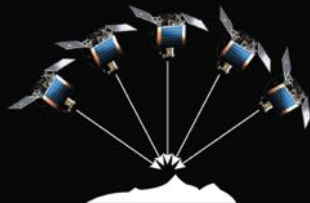
Single image



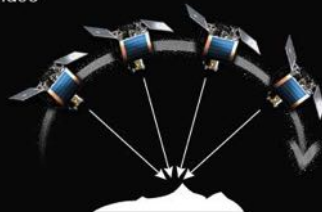
Stereo image



Multi-look



Video



THE HEADLINES..



“Could sub-orbital flights have made life from space your shed?”

THE  TIMES



EO APPLICATION SNAPSHOTS..



Land Cover
Classification



Land Use
Classification



Urban Planning



Coastal
Planning



Marine Spatial
Planning



Ship Detection



Fisheries
Monitoring



Piracy



Oil Spill
Monitoring



Burn Scar
Mapping



Wetland
Mapping



Mangrove
Mapping



Drought



Desertification



Locusts



Earthquakes



Landslides



Fluvial Floods



Forestry
Inventory



Deforestation



Afforestation



Forest Fires



Forest Pest and
Disease
Monitoring



Hydrocarbon
Exploration



Subsidence



Population
Density



Monitoring
Ports



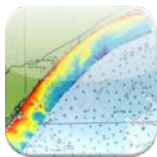
Snow Pack
Monitoring



Snow-Water
Equivalent
Determination



Hurricane
Impact
Mapping



Shallow Water
Bathymetry



Soil Chemistry



Mining



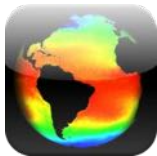
Ground Water
Identification



Ground Water
Flooding
Susceptibility



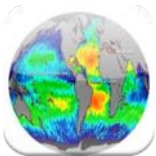
Algal Blooms



Sea Surface
Temperature



Sea Surface
Roughness



Ocean Salinity



Ocean Colour
and Chlorophyll



Permafrost
Monitoring



Sediment
Transport



Invasive Species
Monitoring



Agricultural
Insurance
Monitoring



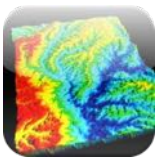
Asset
Management



Route Planning



Illicit Crop
Monitoring



3D modelling



Media



Refugee Camp
Assessments



Border Control



Famine Early
Warning



Business
Analytics



Evacuation
Planning





CLOUD REMOVAL USING SATELLITE VIDEO



New Delhi Airport, 2018



ML & AI FOR ADVANCED DATA INTERPRETATION



Application of machine learning and AI to the large quantities of data created is the ultimate game-changer



MINE TO MARKET



AIS, Radar and
RF tracking

End User

Cathode Pile

China

Transim

Chile - Copper

